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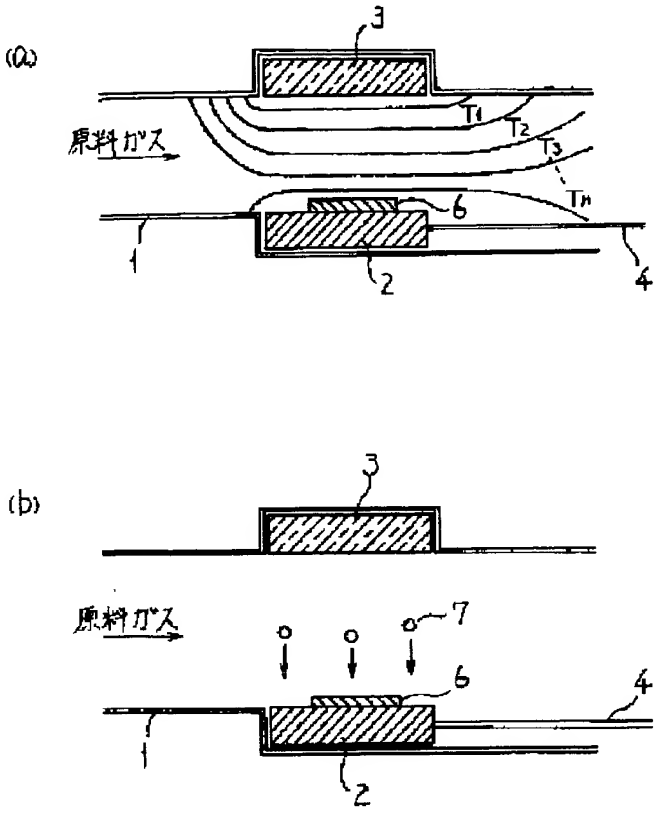
TITLE : APPARATUS AND METHOD FOR VAPOR GROWTH



ABSTRACT : PURPOSE: To cause the growth of an even semiconductor crystal having a desired thickness and desired compositions on a large-sized substrate using a source gas which has a low decomposition temperature by heating a first susceptor, on which a substrate is positioned, and a second susceptor up to each predetermined temperature to achieve a crystal growth, wherein the first susceptor is situated opposite to the second susceptor.

CONSTITUTION: A second susceptor 3 is positioned in opposition to a first susceptor 2 on which a substrate 6 to be subjected to a crystal growth is positioned. The first susceptor 2 is maintained at a temperature less than the decomposition temperature T_0 of the source gas, whilst the second susceptor 3 is kept in excess of the decomposition temperature T_0 of the source gas. At this time, space temperature distributions in a reactive tube 1 are denoted by the group of curves T_1, T_2,... T_n; the curves are flat along the surface of the substrate 6; and the temperature distributions over the surface of the substrate 6 become uniform. Since $T_1>T_0>T_n$, the decomposition of the source gas occurs only in the vicinity of the second susceptor 3 which is remote from the substrate, and constituent elements 7 resulting from the decomposition of the gas are diffused in the form of a gas towards the substrate 6. Accordingly, a uniform crystal growth is achieved over the surface of the substrate 6.